

REMARKS

Claims 1, 2, and 12-20 are pending in the application and are presented for reconsideration and further examination in view of the foregoing amendments and following remarks.

In the outstanding Office Action claims 1-2 and 12-19 were rejected under 35 U.S.C. § 103(a) as obvious over each of U.S. Patent No. 5,589,661 to Menke et al.; U.S. Patent No. 6,143,103 Ryder; and U.S. Patent Nos. 6,059,906 and 6,364,975 to Fleming et al.

By this Response and Amendment claim 1 has been amended; newly submitted claim 21 has been added; and the rejections under section 103 are traversed and arguments in support thereof are provided.

Independent claim 1 has been amended to limit the microcrystalline carbon powder to activated carbon or graphite.

Support for newly added claim 20 is found in the originally filed specification at page 8, lines 4-6.

It is therefore respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. § 132.

Rejection under 35 U.S.C. § 103

The Examiner rejected claims 1-2 and 12-19 as obvious over each of U.S. Patent No. 5,589,661 to Menke et al.; U.S. Patent No.

6,143,103 Ryder; and U.S. Patent Nos. 6,059,906 and 6,364,975 to Fleming et al.

RESPONSE

Applicants respectfully traverse the rejections.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) that some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all the claim limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

Applicants traverse the rejections because all three prongs for a *prima facie* case of obviousness have not been established for each of the rejections in that, for example, all the claim limitations are not found in the cited references.

Independent claim 1 is directed to a gas generating composition comprising microcrystalline carbon powder as a reducing agent in an amount from 1 to 6wt% and wherein the microcrystalline carbon powder is activated carbon or graphite.

Applicants respectfully submit that none of the cited references disclose a gas generating composition containing a specific amount of microcrystalline carbon power as claimed.

The Menke patent discloses a propellant composition containing phase-stabilized ammonium nitrate, a binder polymer, a plasticizer, and a burning moderator. Although Table 1 of the Menke patent shows use of carbon black, the amount (0.5%) of carbon black is less than the preferred range of the microcrystalline carbon powder of the present invention (1 to 6wt%). Further, there is no description about the functions of carbon black in the Menke specification. Based on the amount of carbon black in the propellant composition, the carbon black will not promote decomposition of ammonium nitrate when ignited. Therefore, the carbon black may be used as a burning moderator or a blacking agent, not a reducing agent. In addition, the Menke patent does not disclose use of activated carbon or graphite.

Examples 1 and 2 of the Ryder patent show use of carbon black in a gas generating composition. However, the amount (0.5%) of carbon black of Ryder is less than the preferred range of the microcrystalline carbon powder of the present invention. Further, there is no description about the functions of carbon black in the Ryder specification. Based on the amount of carbon black, the carbon black will not promote decomposition of ammonium nitrate when ignited. Therefore, the carbon black may be used as a burning moderator or a blacking agent, not a reducing agent. In addition, the Ryder patent does not disclose use of activated carbon or graphite.

The Fleming patent discloses a propellant composition containing ammonium nitrate. Some examples show use of carbon black. However, the carbon black is an opacifier, not a reducing agent. Therefore, the carbon black of Fleming is not a microcrystalline carbon powder as claimed. Further, the Fleming patent does not disclose use of activated carbon or graphite.

As described, carbon black is used as a blacking agent or an opacifier in the cited references, and carbon black is not essential for the composition of the cited references. Therefore, even if carbon black is not mixed, such composition will function as a gas generating composition and a propellant composition. In contrast, the microcrystalline carbon powder of the presently claimed invention functions as a reducing agent and is an essential component for the composition of the present invention. Therefore, if carbon black is not mixed, such composition will not function as a gas generating composition. Claim 1 is therefore asserted to be patentable over the cited references. Claims 2 and 12-19, dependent from claim 1, are asserted to be patentable over the cited references for at least the same reasons that claim 1 is patentable thereover.

Accordingly, reconsideration and withdrawal of the rejections is respectfully requested.

Newly Submitted Claim

Newly submitted claim 21, dependent from claim 1, is asserted to be patentable over the cited prior art for at least the same reasons that claim 1 is asserted to be patentable thereover.

MISCELLANEOUS

The references cited by the Examiner have been reviewed and it is agreed that the design claim as originally presented and as herein resubmitted are patentable thereover.


CONCLUSION

In light of the foregoing, Applicant submits that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

Respectfully submitted,
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